

**To:** Paul Davis[p\_davis@envirologicinc.com]  
**Cc:** Griswold, Hays[Griswold.Hays@epa.gov]  
**From:** Ostrander, David  
**Sent:** Fri 8/28/2015 4:34:35 PM  
**Subject:** Re: ANOTHER analysis of the amount of water released into the Animas

Thanks. Let me see what I can do.

Sent from my iPad

> On Aug 28, 2015, at 9:47 AM, Paul Davis <p\_davis@envirologicinc.com> wrote:  
>  
> Hi David,  
>  
> The timeline states that the USGS informed the EPA that the release was larger than 1,000,000  
gallons.  
>  
> A correct timeline would state that the EPA was informed (by me) that the release was larger than  
1,000,0000 gallons. The EPA then sent my estimate to the USGS for confirmation where my 3 million  
gallon estimate was confirmed.  
>  
> The EPA timeline is misleading at best and not does give me any credit.  
>  
> Paul  
>  
>  
>> On Aug 28, 2015, at 9:24 AM, Ostrander, David <Ostrander.David@epa.gov> wrote:  
>>  
>> I did not get your specific concerns on the timeline. The timeline was done by the phone OSC in the  
regional office early on. Let me know and we will see if a correction or more detailed update is warranted.  
>>  
>> Thanks  
>>  
>> Sent from my iPad  
>>  
>>> On Aug 28, 2015, at 9:17 AM, Paul Davis <p\_davis@envirologicinc.com> wrote:  
>>>  
>>> Hi David,  
>>>  
>>> Here the EPA's current chronology of events.  
>>>  
>>> <http://www2.epa.gov/goldkingmine/gold-king-mine-chronology>  
>>>  
>>> It states:  
>>>  
>>> [cid:F35C55C3-0BFC-4A73-AD6C-D8E8A743F20D]  
>>> This is an incomplete and misleading characterization of events.  
>>>  
>>> Do you know when this will be corrected?  
>>>  
>>> hope all is well  
>>>  
>>> Sincerely  
>>>  
>>> Paul Davis  
>>>

>>>

>>> On Aug 9, 2015, at 10:45 PM, Ostrander, David  
 <Ostrander.David@epa.gov<mailto:Ostrander.David@epa.gov>> wrote:  
 >>>

>>> Paul. I owe you a great thank you for your prompt thinking that brought this information to us. Without your action we would still be guessing. We wanted that official verification from USGS to cover our backside. sorry the public acknowledgment went elsewhere but we will tell the story of what really happened. Thanks again  
 >>>

>>> Sent from my iPhone  
 >>>

>>> On Aug 9, 2015, at 8:27 PM, Griswold, Hays  
 <Griswold.Hays@epa.gov<mailto:Griswold.Hays@epa.gov>> wrote:  
 >>>

>>> Paul as you might guess I do not have any say in what the RA says...they know who generated the data but wanted it confirmed by the USGS I will see they get this message and they can go from there...  
 >>> thanks again...I know who the credit goes to and your analysis was correct...  
 >>>

>>> Hays  
 >>>

>>> Sent from my iPad  
 >>>

>>> On Aug 9, 2015, at 7:59 PM, Paul Davis  
 <p\_davis@envirologicinc.com<mailto:p\_davis@envirologicinc.com>> wrote:  
 >>>

>>> Hi Hays,  
 >>>

>>> I just listened on line to the public meeting in Durango and heard the EPA spokesman (Shawn McGrath) say the new estimate is 3 million gallons based on the USGS gaging station at Cement Creek.  
 >>>

>>> Only one small issue — he gave the USGS credit for realizing this station has caught the plume and gave the USGS credit for doing the analysis.  
 >>>

>>> Not that I care much, but I do care a little about getting credit for the analysis.  
 >>>

>>> thanks and I hope all is well  
 >>>

>>> Paul Davis  
 >>>

>>> On hAug 7, 2015, at 11:13 PM, Griswold, Hays <  
 Griswold.Hays@epa.gov<mailto:Griswold.Hays@epa.gov>> wrote:  
 >>>

>>> Thank you very much for the timely information we will check other sources our estimate was based on the estimated volume of the adit evacuated by the water.  
 >>>

>>> Thanks again  
 >>>

>>> Hays  
 >>>

>>> Sent from my iPad  
 >>>

>>> On Aug 7, 2015, at 3:28 PM, Paul Davis  
 <p\_davis@envirologicinc.com<mailto:p\_davis@envirologicinc.com>> wrote:  
 >>>

>>> Dear Mr. Griswold,  
 >>>

>>> I just performed a similar analysis for the USGS gaging station on Cement Creek.  
>>>  
>>> I get just over 3 million gallons.  
>>>  
>>> Now it is possible I have a systematic error so these estimates need to be independently reviewed  
>>>  
>>> hope this helps,  
>>>  
>>> IF you want or need to talk to me I will be traveling to Farmington, New Mexico this afternoon but you  
can call me at 505-688-6053  
>>>  
>>>  
>>>  
>>> Sincerely,  
>>>  
>>> Paul Davis  
>>>  
>>>  
>>> Begin forwarded message:  
>>>  
>>> From: Paul Davis <p\_davis@envirologicinc.com<mailto:p\_davis@envirologicinc.com>>  
>>> Subject: analysis of the amount of water released into the Animas  
>>> Date: August 7, 2015 at 12:34:21 PM MDT  
>>> To: griswold.hays@epa.gov<mailto:griswold.hays@epa.gov>  
>>>  
>>> Dear Mr. Griswold,  
>>>  
>>> We spoke briefly in the Durango Coffee Shop this morning. I am a hydrologist (mainly groundwater)  
and, using the USGS gaging station at Silverton, estimated the quantity of Wednesday's release.  
>>>  
>>> Here is the hydrograph from the days before, during and after the spill.  
(<http://waterdata.usgs.gov/nwis/uv?09359020>)  
>>>  
>>> <PastedGraphic-1.tiff>  
>>>  
>>> The spill clearly shows up on August 5th.  
>>>  
>>> I took the period of record from late on the 4th to the evening of the 5th and estimated the trend of  
the base flow (flow that would have occurred without the spill. I then subtracted that estimated base flow  
from the flow during the spill. Next integrated (added up) the flow under the remaining curve (which is  
just a curve of the spill minus base flow.  
>>>  
>>> I get about 420,000 cubic feet (the number I mistakenly told you this morning as gallons) or about  
3,160,000 gallons. See the attached spreadsheet.  
>>>  
>>> A WORD OF CAUTION — this analysis was done in a hurry and must be checked by someone else.  
>>>  
>>> Also - a cross check of the analysis could be performed by analyzing USGS gaging station records  
from their station on the Animas at Durango.  
>>>  
>>> I have time later today if you want to meet and discuss this analysis.  
>>>  
>>> I do hope it is useful to you.  
>>>  
>>> Sincerely,  
>>>

>>> Paul Davis  
>>>  
>>>  
>>> Paul Davis  
>>> EnviroLogic Inc.  
>>> 736 Main Street, Suite 5  
>>> Durango, Colorado 81301-8621  
>>>  
>>> Fax: 505-286-8438  
>>> US cell: 505-688-6053  
>>> UK cell: 447405178232  
>>> Email: p\_davis@envirologicinc.com<mailto:p\_davis@envirologicinc.com>  
>>> Website: www.EnviroLogicInc.com<http://www.EnviroLogicInc.com>  
>>>  
>>> <PastedGraphic-1.tiff>  
>>  
>  
> Paul Davis  
> EnviroLogic Inc.  
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